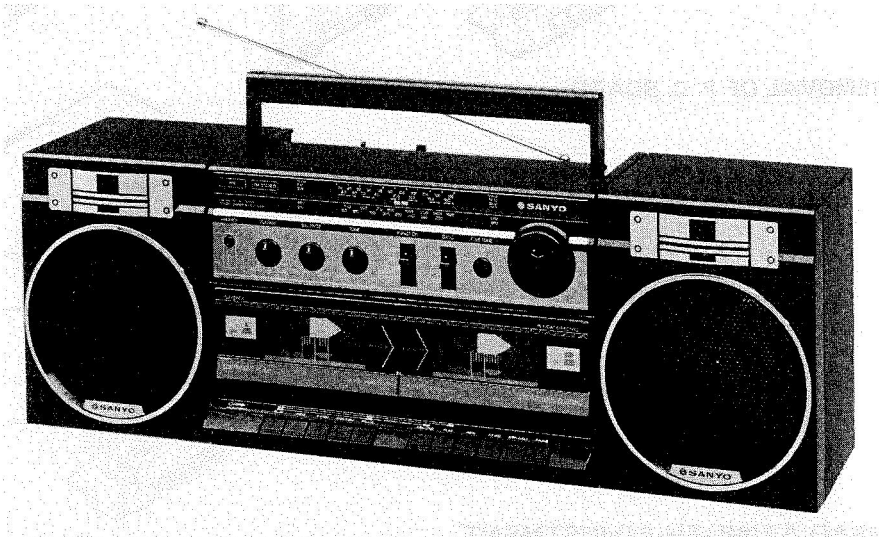
SERVICE MANUAL

SANYO

M W170L (EUROPE)

CASSETTE RECORDER



SPECIFICATIONS

Recording system	AC bias, 4-track stereo
Erasing system	Magnet erase, 2-track
Tape speed	4.75cm/sec. (1-7/8 i.p.s.)
Frequency range	LW: 148.5 — 283.5 kHz
	MW: 525.5 — 1,606.5 kHz
	SW: 5.95 — 18 MHz
	FM: 87.5 — 108 MHz
Terminal impedance	PHONES: 32 ohms
	REC/PB 6 kohms/2.2 kohms (1 kHz)
Frequency response	80 — 12,000 Hz
Output power	11W (P.M.P.O.) 3,5W+3.5W (MUSIC POWER)
Power source	DC: 9.0V, "D" type × 6
	AC: 120/220V, 50/60Hz
Dimensions	590 (W) × 200 (H) × 140 (D) mm
Weight	Approx. 4.5 kg including batteries

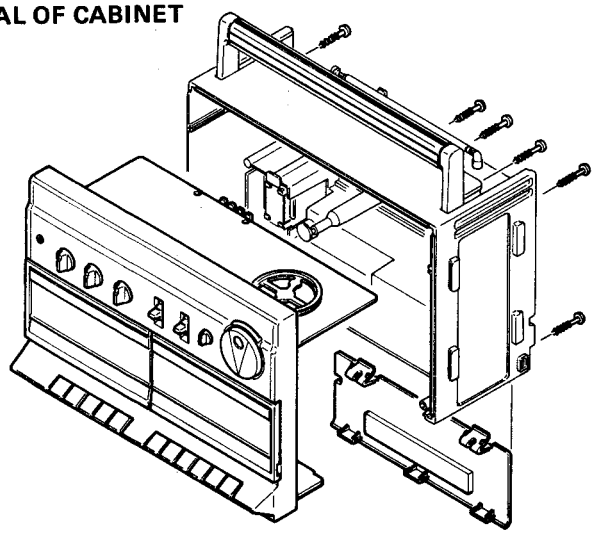
Specifications subject to change without notice.

REFERENCE NO. WM-20724

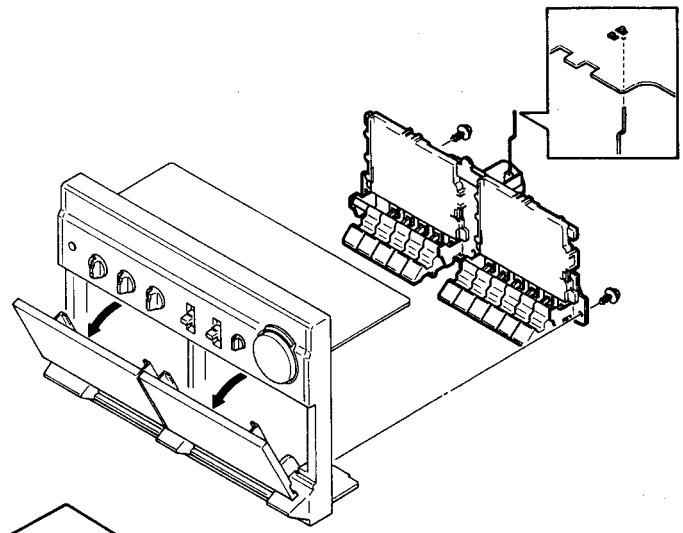
* **This recorder incorporates two mechanisms. The left side mechanism for playback is referred to as TAPE A, and the right side mechanism for record/monitor is called TAPE B in this manual.**

DISASSEMBLY

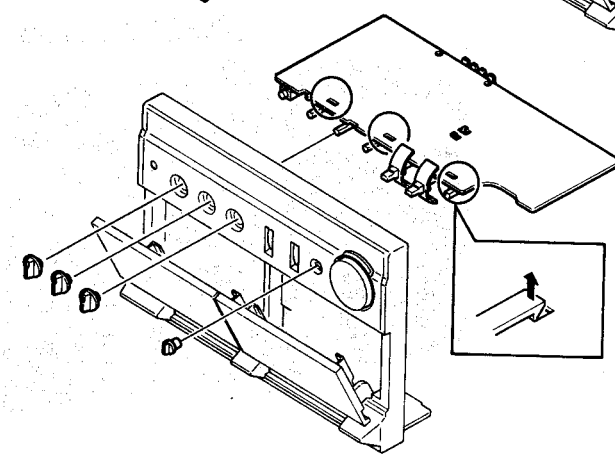
REMOVAL OF CABINET



REMOVAL OF MECHANIS

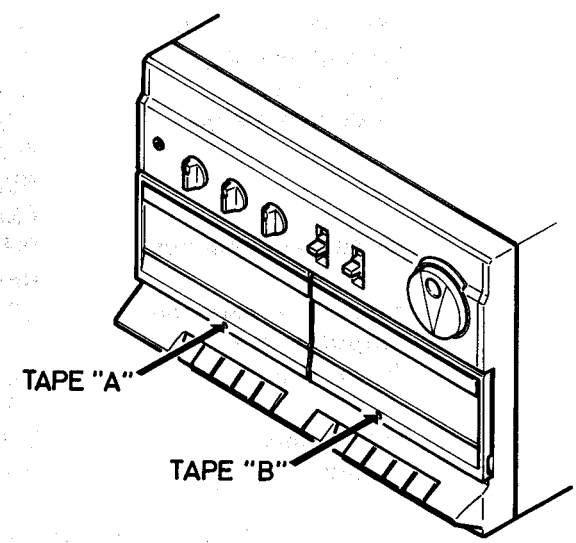


REMOVAL OF P. C. BOARD



HEAD AZIMUTH ADJUSTMENT

* After replacing the head, demagnetize the head by using a head eraser.
* Be sure to clean the head assembly before making the adjustment.



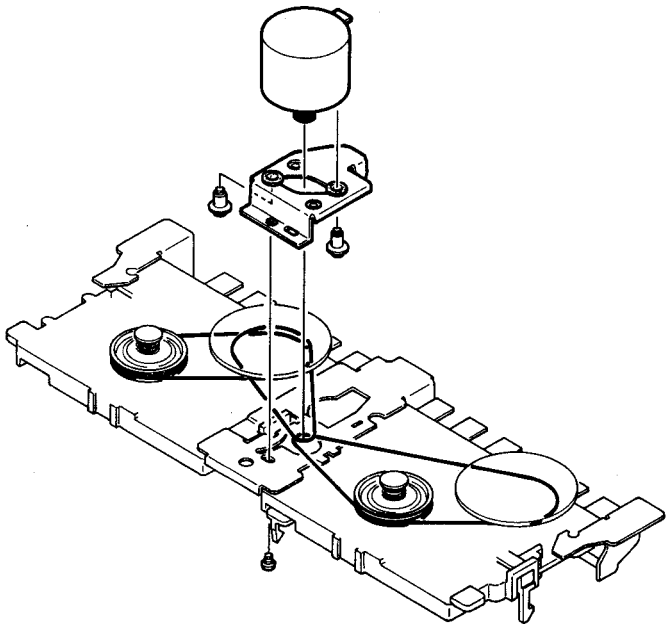
1. TAPE DECK A AZIMUTH ADJUSTMENT

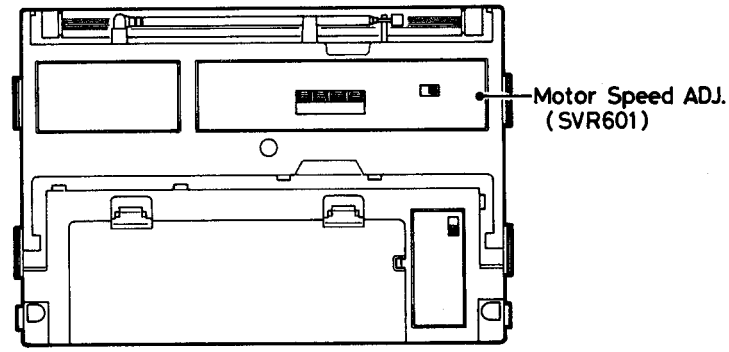
(1) Insert the test tape (VTT-658, etc.; 10 kHz) for azimuth adjustment in to tape deck A.
(2) Press tape deck A's play button.
(3) Use a cross-tip screwdriver to turn the screw for adjustment of the tape deck A azimuth so that the left/right outputs are maximized while tape deck A is playing back.

2. TAPE DECK B AZIMUTH ADJUSTMENT

(1) Insert the test tape for azimuth adjustment in to tape deck B.
(2) Press tape deck B's play button.
(3) Use a cross-tipe screwdriver to turn the screw for adjustment of the tape deck B azimuth so that the left/right outputs are mazimized while tape dec B is playing back.

HOW TO REPLACE THE MOTOR AND ADJUST THE SPEED

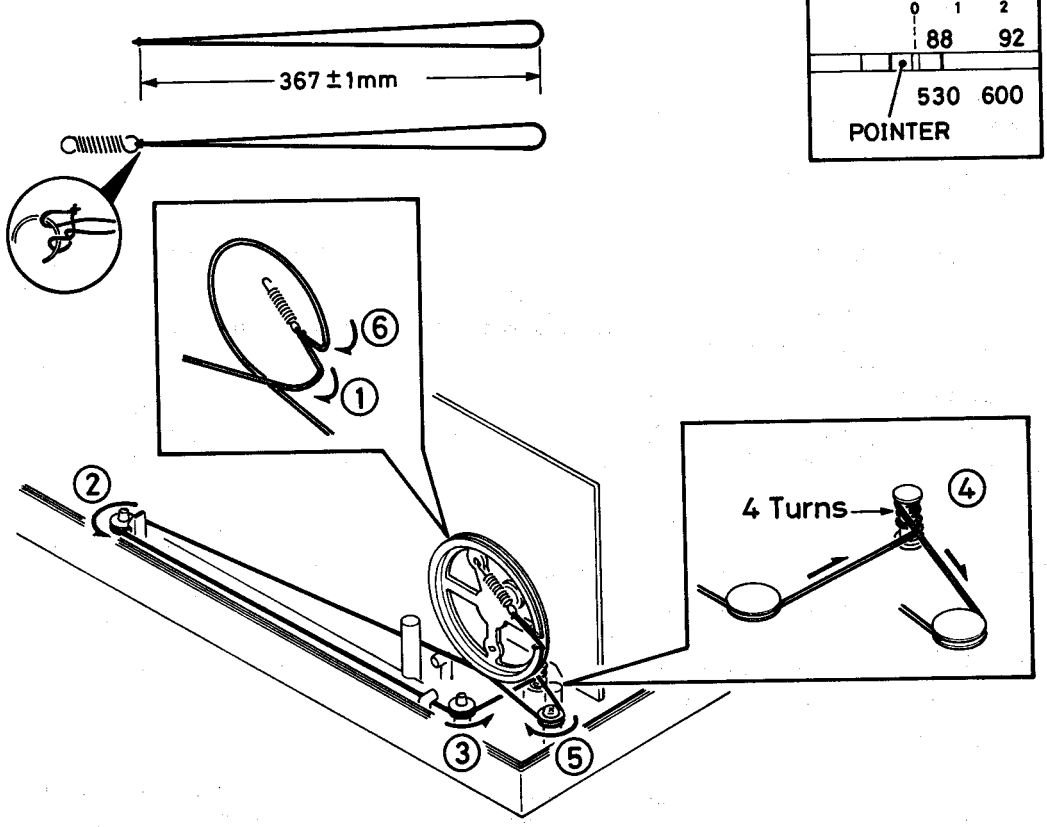




MOTOR SPEED ADJUSTMENT

- FUNCTION SWITCH : DUBBING (NORMAL)
  (1) Insert the test tape (MTT-111N, etc. 3,000 Hz) into tape deck A.
  (2) Press tape deck A's play button.
  (3) Adjust SVR601 (on the amp. board) so that the frequency counter shows a reading of 3,000 Hz.

DIAL CORD STRINGING



ADJUSTMENT OF TUNER

* Use a plastic screwdriver for adjustment.
* Adjust the intermediate frequency of AM and FM to the frequency of ceramic filter.

Supply voltage : DC 9.0V
Speaker impedance : 3 ohm
Standard Output : 50mW (0.4V)
Function selector : RADIO

MW **BAND SELECT SWITCH : MW**

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	IF	Closed the output terminal by sweep generator, it place to L105-A	Connect sweep generator to AM C307,GND	460kHz	Low	T303	MAX.
2	Tuning Coverage	Connect AM SG to Test Loop	Connect VTVM to speaker terminals	505kHz	Low End	L107	MAX.
3				1650kHz	High End	VCT-4	
4	Tracking	Connect AM SG to Test Loop	Connect VTVM to speaker terminals	600kHz	600kHz	L105-A	MAX.
5				1400kHz	1400kHz	VCT-3	
6	Repeat adjustments						

LW **BAND SELECT SWITCH : LW**

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	Tuning Coverage	Connect AM SG to Test Loop	Connect VTVM to speaker terminals	145kHz	Low End	L108	MAX.
2				295kHz	High End	CT-4	
3	Tracking	Connect AM SG to Test Loop	Connect VTVM to speaker terminals	160kHz	160kHz	L105-B	MAX.
4				280kHz	280kHz	CT-2	
5	Repeat adjustments						

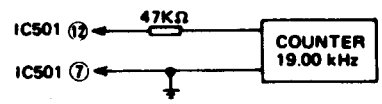
SW **BAND SELECT SWITCH : SW**

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	Tuning Coverage	Connect AM SG to ANT terminal through dummy	Connect VTVM to speaker terminals	5.8MHz	Low End	L106	MAX.
2				19.0MHz	High End	CT-3	
3	Tracking	Connect AM SG to ANT terminal through dummy	Connect VTVM to speaker terminals	7.0MHz	7.0MHz	L104	MAX.
4				18.0MHz	18.0MHz	CT-1	
5	Repeat adjustments						

FM **BAND SELECT SWITCH : FM** **FM DUMMY ANTENNA: 75Ω unbalance**

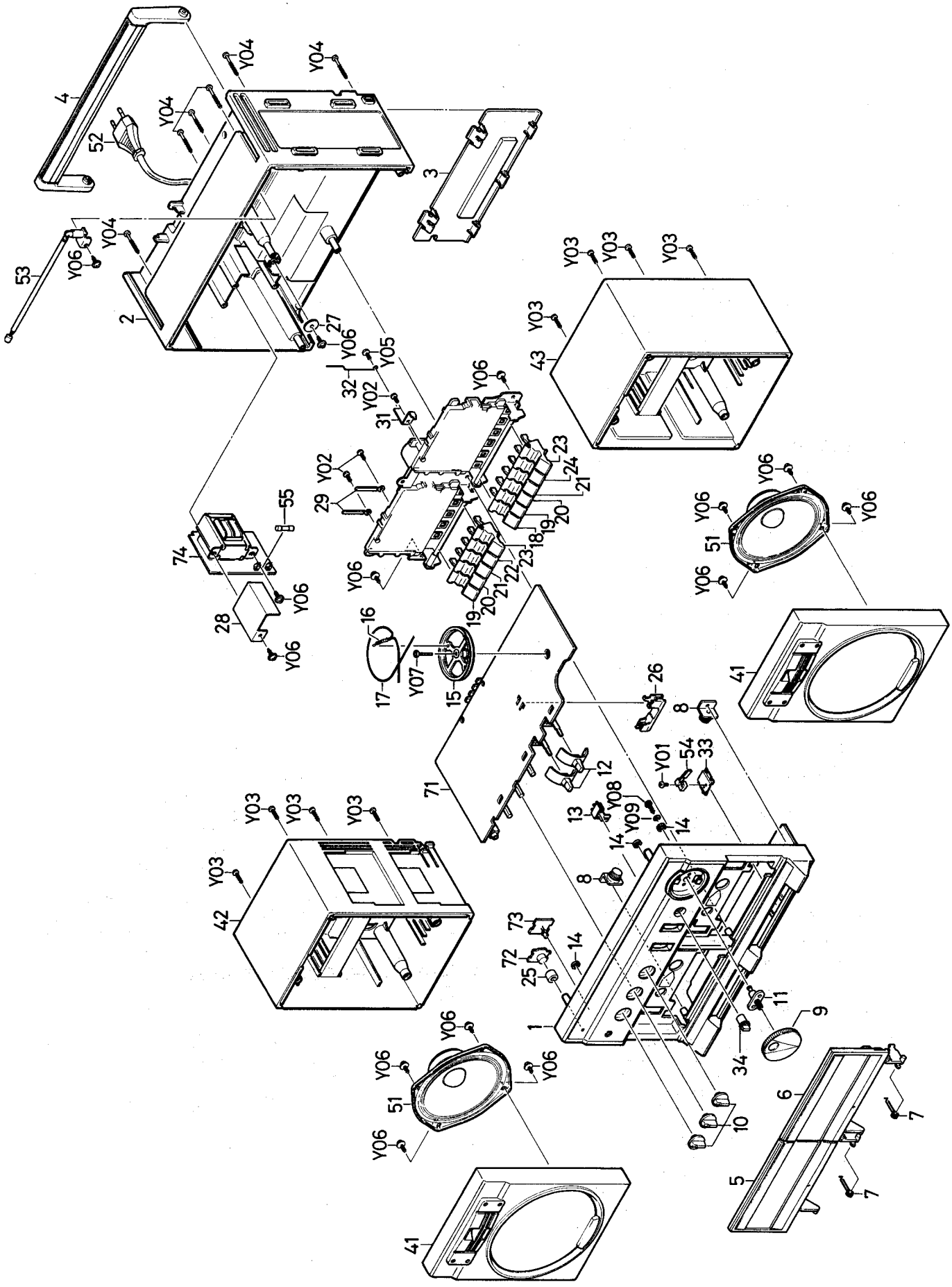
Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	IF	Connect sweep generator of IC101 (1), TP2 (GND)	Connect sweep generator of input line to C308, GND	10.7MHz	Low	T301	
2	Detector					T302	
3	Tuning Coverage	Connect FM SG to TP1, TP2 (GND)	Connect VTVM to speaker terminals	87.35MHz	Low End	L102	MAX.
4				108.3MHz	High End	VCT-2	
5	Tracking	Connect FM SG to TP1, TP2 (GND)	Connect VTVM to speaker terminals	90.0MHz	90.0MHz	L101	MAX.
6				106.0MHz	106.0MHz	VCT-1	
7	Repeat adjustments						

Adjustment of FM VCO
Radio band selector: FM STEREO



Turn SVR501 until the frequency counter reads 19.00 kHz ± 100 Hz

EXPLODED VIEW (CABINET & CHASSIS)



PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	141-6-133T-90303	INNER CORR CASE
	141-6-145T-24000	FOAM PLASTIC CASE
	141-6-231T-45450	INNER POLYE COVER, SET, 450X450X0.03MM
	141-2-246T-87700	SHEET, 220X1100X0.8MM
	141-2-247T-63000	SHEET, 200X770MM, SPEAKER BOX
	141-6-479T-92801	LABEL, CAUTION, BATTERY
	141-6-409T-47703	INST MANUAL

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	141-0-111T-74301	CABINET ASSY
2	141-0-126T-60502	BACK LID ASSY
3	141-0-128T-25401	BATTERY LID ASSY
4	141-2-171T-22901	HANDLE, BACK LID
5	141-0-124T-55600	TOP LID ASSY, CASSETTE, TAPE "A"
6	141-0-124T-55500	TOP LID ASSY, CASSETTE, TAPE "B"
7	141-2-860T-19600	SPRING WIRE, TOP LID, CASSETTE
8	141-0-581T-32005	GEAR ASSY, TOP LID, CASSETTE
9	141-2-165T-09303	ROTARY KNOB, TUNING
10	141-2-165T-01200	ROTARY KNOB, VOLUME/BALANCE/TONE
11	141-0-566T-15100	TUNNING SHAFT ASSY
12	141-2-162T-25401	LEVER KNOB, FUNCTION/BAND
13	141-2-511T-31500	POINTER
14	141-2-661T-19200	PULLEY, CABINET MTG.
15	141-2-538T-12700	DRUM, DIAL ROPE
16	141-2-851T-06300	SPRING COIL, DIAL ROPE
17	141-2-340T-03001	ROPE, 0.3X1000MM
18	141-2-162T-28600	LEVER KNOB, RECORD
19	141-2-162T-28700	LEVER KNOB, PLAY
20	141-2-162T-28800	LEVER KNOB, REW
21	141-2-162T-28900	LEVER KNOB, F.FWD
22	141-2-162T-29000	LEVER KNOB, STOP/EJECT, TAPE "A"
23	141-2-162T-29100	LEVER KNOB, PAUSE
24	141-9-162T-29000	LEVER KNOB ASSY, STOP/EJECT, TAPE "B"
24-1	141-2-162T-29000	LEVER KNOB, STOP/EJECT
24-2	141-2-755T-08000	SHAFT
25	141-2-385T-04001	BRACKET MIC
26	141-2-732T-51400	SLIDE, RECORD/PLAY
27	412 012 2505	SPECIAL WASHER, FIBER, 3.2X17X1MM,
27-1		AC POWER CORD MTG.
28	141-2-320T-02300	SHIELD PLATE, POWER TRANSFORMER
29	141-2-472T-01001	LUG, MECHANISM
31	141-2-290T-32300	BRACKET, RECORD/PLAY
32	141-2-860T-19700	SPRING WIRE, RECORD/PLAY
33	141-2-365T-62100	BRACKET SWITCH, STOP
34	141-2-163T-89642	ROTARY KNOB, FINE TUNE
41	141-9-122T-68800	FRONT PANEL, SPEAKER BOX WITH TWEETER

Ref. No.	Part No.	Description
41-1	141-2-122T-68800	FRONT PANEL, SPEAKER BOX
41-2	4-151T-45900	SPEAKER, TWEETER
or	4-151T-51400	SPEAKER, TWEETER
42	141-0-126T-60600	BACK LID ASSY, SPEAKER BOX, LEFT
43	141-0-126T-60700	BACK LID ASSY, SPEAKER BOX, RIGHT

FIXING PARTS

Ref. No.	Part No.	Description
Y1	411 002 8503	SCR PAN 3X6MM
Y2	411 023 3303	SCR S-TPG PAN 2.6X8MM
Y3	411 023 4904	SCR S-TPG PAN 3X14MM
Y4	411 026 4802	SCR S-TPG PAN 3X30MM
Y5	411 020 9902	SCR S-TPG BRZ + FLG 3X8MM
Y6	411 020 8905	SCR S-TPG BRZ + FLG 3X10MM
Y7	411 098 7305	BOLT HEX C-SCT 2.6X20MM
Y8	411 098 6407	SCR S-TPG PAN 2.3X12MM
Y9	412 011 9802	SPECIAL WASHER, FIBER, 2.6X7X0.5MM

ELECTRICAL PARTS

Ref. No.	Part No.	Description
51	4-151T-57674	SPEAKER, WOOFER
52	⚠ 4-243T-84973	POWER CORD, AC
or	⚠ 4-243T-85473	POWER CORD, AC
53	4-244T-08571	TELESCOPIC ROD ANTENNA
54	4-238T-72700	SWITCH, STOP, S991, CABINET MTG.
55	⚠ 4-234T-11085	FUSE, 1.25A, 250V
	4-151T-45900	SPEAKER, TWEETER
or	4-151T-51400	SPEAKER, TWEETER
	4-243T-39400	LEAD CORD, EXT. SPEAKER
	4-240T-25300	SOCKET, ROD ANTENNA
C651	403 069 8404	CERAMIC 0.01U Z 50V

TUNER & AMP. P.C.BOARD ASSY

Ref. No.	Part No.	Description
71	141-4-290T-44401	P.C BOARD ASSY, TUNER & AMP.
	4-240T-53800	SOCKET, PHONES
	4-267T-03800	SOCKET, DIN
	141-2-368T-24200	HEAT SINK, IC
	4-237T-13300	TERMINAL BOARD, EXT. SPEAKER
	4-237T-00100	TERMINAL BOARD
VC/VCT	4-224T-22171	TUNING CAPACITOR
CT1	4-224T-15571	TRIMMER, 11PF
CT2	4-224T-15471	TRIMMER, 30PF
CT3	4-224T-15571	TRIMMER, 11PF
CT4	4-224T-15471	TRIMMER, 30PF
T301	4-256T-36442	I.F.T, FM
T302	4-256T-36542	I.F.T, FM
T303	4-256T-36642	I.F.T, AM
L101	4-265R-11310	VHF COIL, FM

PARTS LIST

Ref. No.	Part No.	Description
L102	4-265T-51610	VHF COIL, FM
L103	4-253T-15008	FILTER, SW
L104	4-257T-51010	ANT COIL, SW
L105	4-257T-78101	ANT COIL ASSY, MW/LW
L106	4-258T-51442	O.S.C COIL, SW
L107	4-258T-51342	O.S.C COIL, MW
L108	4-258T-51542	O.S.C COIL, LW
L601	4-258T-60710	O.S.C COIL
CF301	4-256T-80400	I.F.FILTER, RED, FM
or	4-256T-80471	I.F.FILTER, BLUE, FM
or	4-256T-80472	I.F.FILTER, ORANGE, FM
or	4-256T-80473	I.F.FILTER, BLACK, FM
or	4-256T-80474	I.F.FILTER, WHITE, FM
CF302	4-256T-81171	I.F FILTER, AM
BPF	4-257T-64440	ANT COIL
S1	4-248T-38500	SWITCH, BAND
S501	4-238T-53600	SWITCH, FM MODE
S901	4-248T-38571	SWITCH, FUNCTION
S902	4-248T-24171	SWITCH, RECORD/PLAY
S971	4-238T-95400	SWITCH, BEAT CANCEL
VR101	4-220T-38071	VARIABLE RESISTOR, FINE TUNING
VR901	4-220T-36200	VARIABLE RESISTOR, TONE
VR902	4-220T-45900	VARIABLE RESISTOR, BALANCE
VR903	4-220T-36172	VARIABLE RESISTOR, VOLUME
SVR501	4-220T-33077	SEMI-FIXED RESISTOR, 10K OHM
SVR601	4-222T-85872	SEMI-FIXED RESISTOR, 1K OHM, MOTOR
TP	4-237T-00100	TERMINAL BOARD
IC101	409 016 0200	IC LA1186N-AUDIO
IC301	409 016 1900	IC LA1260S
IC501	409 016 9906	IC LA3365
IC901	409 035 6504	IC M51166P
IC902	409 018 0208	IC LA4557
Q101	405 018 7902	TR 2SC380TM-O
Q301	405 018 7902	TR 2SC380TM-O
Q601	405 019 4108	TR 2SC536-G-AUD-NP
or	405 020 5200	TR 2SC945-K
Q651	405 005 2002	TR 2SA733-P
Q708	405 019 4108	TR 2SC536-G-AUD-NP
or	405 020 5200	TR 2SC945-K
Q760	405 019 4108	TR 2SC536-G-AUD-NP
or	405 020 5200	TR 2SC945-K
Q808	405 019 4108	TR 2SC536-G-AUD-NP
or	405 020 5200	TR 2SC945-K
Q860	405 019 4108	TR 2SC536-G-AUD-NP
or	405 020 5200	TR 2SC945-K
Q940	405 012 7403	TR 2SC2001-K
or	405 024 9709	TR 2SD734-E
D101	407 005 4505	DIODE DS442X
D102	407 007 9904	DIODE GMA01
D103	407 000 2605	VARACTOR DI SD115
D651	407 005 4505	DIODE DS442X
D902	407 005 4505	DIODE DS442X
D930	407 005 4505	DIODE DS442X
D940	407 050 6905	ZENER DIODE GZA7.5Y
C101	403 022 8007	CERAMIC 33P J 50V
C102	403 017 0603	CERAMIC 20P J 50V
C103	403 017 0702	CERAMIC 20P J 50V
C104	403 022 7901	CERAMIC 33P J 50V
C105	403 025 7502	CERAMIC 4.7P K 50V
C106	403 069 1504	CERAMIC 1000P K 50V
C107	403 001 5805	CERAMIC 0.022U N 16V
C108	403 002 3107	CERAMIC 0.01U N 25V
C109	403 001 5805	CERAMIC 0.022U N 16V
C110	403 001 5805	CERAMIC 0.022U N 16V
C111	403 033 2902	CERAMIC 8.2P K 50V
C112	403 026 2407	CERAMIC 47P J 50V
C113	403 001 5805	CERAMIC 0.022U N 16V
C114	403 009 2103	CERAMIC 10P J 50V
C115	403 021 7704	CERAMIC 3.3P K 50V
C116	403 009 2103	CERAMIC 10P J 50V

Ref. No.	Part No.	Description
C117	403 028 3808	CERAMIC 56P J 50V
C118	403 003 6107	CERAMIC 3300P M 25V
C119	403 081 7706	POLYPRO 340P J 100V
or	403 088 1806	STYRENE 340P J 50V
C120	403 087 8905	STYRENE 250P J 50V
C121	403 016 2103	CERAMIC 2.2P K 50V
C122	403 010 8408	CERAMIC 12P J 50V
C123	403 014 7803	CERAMIC 180P J 50V
C124	403 009 2004	CERAMIC 10P J 50V
C125	403 001 5805	CERAMIC 0.022U N 16V
C126	403 043 9304	ELECT 47U M 16V
C301	403 069 1504	CERAMIC 1000P K 50V
C302	403 001 5805	CERAMIC 0.022U N 16V
C303	403 001 5805	CERAMIC 0.022U N 16V
C304	403 001 5805	CERAMIC 0.022U N 16V
C305	403 001 5805	CERAMIC 0.022U N 16V
C306	403 041 9009	ELECT 10U M 16V
C307	403 001 5805	CERAMIC 0.022U N 16V
C308	403 073 7202	CERAMIC 470P K 50V
C309	403 040 3701	ELECT 220U M 10V
C310	403 001 5805	CERAMIC 0.022U N 16V
C312	403 003 3304	CERAMIC 0.022U M 25V
C313	403 069 8404	CERAMIC 0.01U Z 50V
C501	403 051 0805	ELECT 4.7U M 50V
C502	403 005 3708	CERAMIC 0.033U N 12V
C503	403 080 5000	POLYPRO 1000P J 100V
C504	403 048 6506	ELECT 0.47U M 50V
C505	403 050 0004	ELECT 2.2U M 50V
C506	403 050 0004	ELECT 2.2U M 50V
C507	403 002 9307	CERAMIC 0.015U M 25V
C508	403 002 9307	CERAMIC 0.015U M 25V
C509	403 050 0004	ELECT 2.2U M 50V
C510	403 050 0004	ELECT 2.2U M 50V
C511	403 009 5609	CERAMIC 100P J 50V
C601	403 073 7202	CERAMIC 470P K 50V
C602	403 069 1504	CERAMIC 1000P K 50V
C603	403 062 5103	POLYESTER 5600P K 50V
C605	403 063 2101	POLYESTER 0.068U K 50V
C606	403 062 0306	POLYESTER 0.047U K 50V
C607	403 041 2307	ELECT 47U M 10V
C701	403 074 6303	CERAMIC 560P K 50V
C702	403 041 2307	ELECT 47U M 10V
C703	403 050 0004	ELECT 2.2U M 50V
C704	403 003 4806	CERAMIC 0.027U K 25V
C705	403 002 9307	CERAMIC 0.015U M 25V
C711	403 074 6303	CERAMIC 560P K 50V
C712	403 041 2307	ELECT 47U M 10V
C713	403 050 0004	ELECT 2.2U M 50V
C714	403 003 4806	CERAMIC 0.027U K 25V
C715	403 004 8704	CERAMIC 1500P M 50V
C716	403 004 8704	CERAMIC 1500P M 50V
C717	403 001 5805	CERAMIC 0.022U N 16V
C719	403 003 3304	CERAMIC 0.022U M 25V
C720	403 072 8408	CERAMIC 330P K 50V
C721	403 003 5100	CERAMIC 0.027U M 25V
C730	403 049 0305	ELECT 1U M 50V
C731	403 069 1504	CERAMIC 1000P K 50V
C732	403 041 2307	ELECT 47U M 10V
C733	403 043 9304	ELECT 47U M 16V
C734	403 058 6008	POLYESTER 0.15U M 50V
C735	403 041 5001	ELECT 470U M 10V
C760	403 049 0305	ELECT 1U M 50V
C761	403 068 9402	CERAMIC 100P K 50V
C762	403 049 0305	ELECT 1U M 50V
C801	403 074 6303	CERAMIC 560P K 50V
C802	403 041 2307	ELECT 47U M 10V
C803	403 050 0004	ELECT 2.2U M 50V
C804	403 003 4806	CERAMIC 0.027U K 25V
C805	403 002 9307	CERAMIC 0.015U M 25V
C811	403 074 6303	CERAMIC 560P K 50V
C812	403 041 2307	ELECT 47U M 10V
C813	403 050 0004	ELECT 2.2U M 50V
C814	403 003 4806	CERAMIC 0.027U K 25V
C815	403 004 8704	CERAMIC 1500P M 50V

PARTS LIST

Ref. No.	Part No.	Description
C816	403 004 8704	CERAMIC 1500P M 50V
C817	403 001 5805	CERAMIC 0.022U N 16V
C819	403 003 3304	CERAMIC 0.022U M 25V
C820	403 072 8408	CERAMIC 330P K 50V
C821	403 003 5100	CERAMIC 0.027U M 25V
C830	403 049 0305	ELECT 1U M 50V
C831	403 069 1504	CERAMIC 1000P K 50V
C832	403 041 2307	ELECT 47U M 10V
C833	403 043 9304	ELECT 47U M 16V
C834	403 058 6008	POLYESTER 0.15U M 50V
C835	403 041 5001	ELECT 470U M 10V
C860	403 049 0305	ELECT 1U M 50V
C861	403 068 9402	CERAMIC 100P K 50V
C862	403 049 0305	ELECT 1U M 50V
C901	403 047 0109	ELECT 4.7U M 25V
C902	403 041 5001	ELECT 470U M 10V
C903	403 041 2307	ELECT 47U M 10V
C904	403 041 2307	ELECT 47U M 10V
C905	403 023 1700	CERAMIC 33P K 50V
C906	403 023 1700	CERAMIC 33P K 50V
C930	403 042 5000	ELECT 1000U M 16V
C940	403 043 2503	ELECT 2200U M 16V
C941	403 040 4005	ELECT 220U M 10V
C942	403 001 5805	CERAMIC 0.022U N 16V
C943	403 001 5805	CERAMIC 0.022U N 16V
C960	403 041 2307	ELECT 47U M 10V
R101	401 025 3609	CARBON 18 JA 1/6W
R102	401 016 1904	CARBON 22 KA 1/4W
R103	401 024 7707	CARBON 100K JA 1/6W
R104	401 020 4403	CARBON 470K KA 1/4W
R105	401 012 6200	CARBON 1K KA 1/4W
R106	401 026 4308	CARBON 3.3K JA 1/6W
R107	401 017 4201	CARBON 270K KA 1/4W
R108	401 012 6200	CARBON 1K KA 1/4W
R109	401 020 0009	CARBON 47 KA 1/4W
R110	401 012 3803	CARBON 10 KA 1/4W
R301	401 018 6204	CARBON 330K KA 1/4W
R302	401 027 9302	CARBON 820K JA 1/6W
R303	401 018 3203	CARBON 330 KA 1/4W
R304	401 024 6700	CARBON 100 JA 1/6W
R305	401 027 8602	CARBON 8.2K JA 1/6W
R306	401 020 0009	CARBON 47 KA 1/4W
R501	401 027 5502	CARBON 6.8K JA 1/6W
R502	401 026 9600	CARBON 470 JA 1/6W
R503	401 016 4202	CARBON 2.2K KA 1/4W
R504	401 022 2506	CARBON 680 KA 1/4W
R505	401 018 4200	CARBON 3.3K KA 1/4W
R506	401 018 4200	CARBON 3.3K KA 1/4W
R507	401 012 6200	CARBON 1K KA 1/4W
R508	401 012 6200	CARBON 1K KA 1/4W
R602	401 012 8709	CARBON 100K KA 1/4W
R603	401 018 3203	CARBON 330 KA 1/4W
R607	401 019 6609	CARBON 4.7 KA 1/4W
R651	401 018 4200	CARBON 3.3K KA 1/4W
R652	401 019 1406	CARBON 390 KA 1/4W
R653	401 021 4501	CARBON 56K KA 1/4W
R701	401 018 2107	CARBON 33 KA 1/4W
R702	401 021 3405	CARBON 5.6K KA 1/4W
R703	401 014 4600	CARBON 1.5K KA 1/4W
R704	401 022 3503	CARBON 6.8K KA 1/4W
R705	401 020 2409	CARBON 4.7K KA 1/4W
R706	401 018 6204	CARBON 330K KA 1/4W
R707	401 019 2304	CARBON 3.9K KA 1/4W
R708	401 019 2304	CARBON 3.9K KA 1/4W
R709	401 014 5607	CARBON 15K KA 1/4W
R711	401 018 2107	CARBON 33 KA 1/4W
R712	401 021 3405	CARBON 5.6K KA 1/4W
R713	401 019 2304	CARBON 3.9K KA 1/4W
R714	401 019 2304	CARBON 3.9K KA 1/4W
R715	401 015 4203	CARBON 18K KA 1/4W
R716	401 022 3503	CARBON 6.8K KA 1/4W
R717	401 020 2409	CARBON 4.7K KA 1/4W
R718	401 016 6206	CARBON 220K KA 1/4W
R719	401 014 4600	CARBON 1.5K KA 1/4W
R721	401 012 8709	CARBON 100K KA 1/4W
R722	401 016 4202	CARBON 2.2K KA 1/4W
R731	401 014 3405	CARBON 150 KA 1/4W
R733	401 012 5005	CARBON 100 KA 1/4W
R760	401 026 4902	CARBON 330K JA 1/6W
R761	401 025 1605	CARBON 1.5K JA 1/6W
R763	401 027 5007	CARBON 68 JA 1/6W
R764	401 012 6200	CARBON 1K KA 1/4W
R765	401 027 0507	CARBON 470K JA 1/6W
R766	401 014 4600	CARBON 1.5K KA 1/4W
R801	401 018 2107	CARBON 33 KA 1/4W
R802	401 021 3405	CARBON 5.6K KA 1/4W
R803	401 014 4600	CARBON 1.5K KA 1/4W
R804	401 022 3503	CARBON 6.8K KA 1/4W
R805	401 020 2409	CARBON 4.7K KA 1/4W
R806	401 018 6204	CARBON 330K KA 1/4W
R807	401 019 2304	CARBON 3.9K KA 1/4W
R808	401 019 2304	CARBON 3.9K KA 1/4W
R809	401 014 5607	CARBON 15K KA 1/4W
R811	401 018 2107	CARBON 33 KA 1/4W
R812	401 021 3405	CARBON 5.6K KA 1/4W
R813	401 019 2304	CARBON 3.9K KA 1/4W
R814	401 019 2304	CARBON 3.9K KA 1/4W
R815	401 015 4203	CARBON 18K KA 1/4W
R816	401 022 3503	CARBON 6.8K KA 1/4W
R817	401 020 2409	CARBON 4.7K KA 1/4W
R818	401 016 6206	CARBON 220K KA 1/4W
R819	401 014 4600	CARBON 1.5K KA 1/4W
R821	401 012 8709	CARBON 100K KA 1/4W
R822	401 016 4202	CARBON 2.2K KA 1/4W
R831	401 014 3405	CARBON 150 KA 1/4W
R833	401 012 5005	CARBON 100 KA 1/4W
R860	401 026 4902	CARBON 330K JA 1/6W
R861	401 025 1605	CARBON 1.5K JA 1/6W
R863	401 027 5007	CARBON 68 JA 1/6W
R864	401 012 6200	CARBON 1K KA 1/4W
R865	401 027 0507	CARBON 470K JA 1/6W
R866	401 014 4600	CARBON 1.5K KA 1/4W
R901	401 022 1202	CARBON 68 KA 1/4W
R902	401 019 2304	CARBON 3.9K KA 1/4W
R905	401 015 3107	CARBON 1.8K KA 1/4W
R906	401 021 2309	CARBON 560 KA 1/4W
R907	401 020 4700	CARBON 4.7M JA 1/4W
R940	401 022 2506	CARBON 680 KA 1/4W
R950	401 018 4200	CARBON 3.3K KA 1/4W
R961	401 027 5007	CARBON 68 JA 1/6W

MIC P.C.BOARD ASSY

Ref. No.	Part No.	Description
72	141-4-290T-44501	P.C BOARD ASSY, MIC
	4-153T-12800	MIC

LED P.C.BOARD ASSY

Ref. No.	Part No.	Description
73	141-4-290T-44601	P.C BOARD ASSY, LED
D501	407 016 3108	LED LN217RP, RED, FM STEREO

POWER SUPPLY P.C.BOARD ASSY

Ref. No.	Part No.	Description
74	141-4-290T-44701	P.C BOARD ASSY, POWER SUPPLY
	141-2-381T-04200	BRACKET FUSE
	4-237T-00100	TERMINAL BOARD
	141-2-382T-18900	TERMINAL
T901	⚠ 4-320T-12700	POWER TRANSFORMER

PARTS LIST

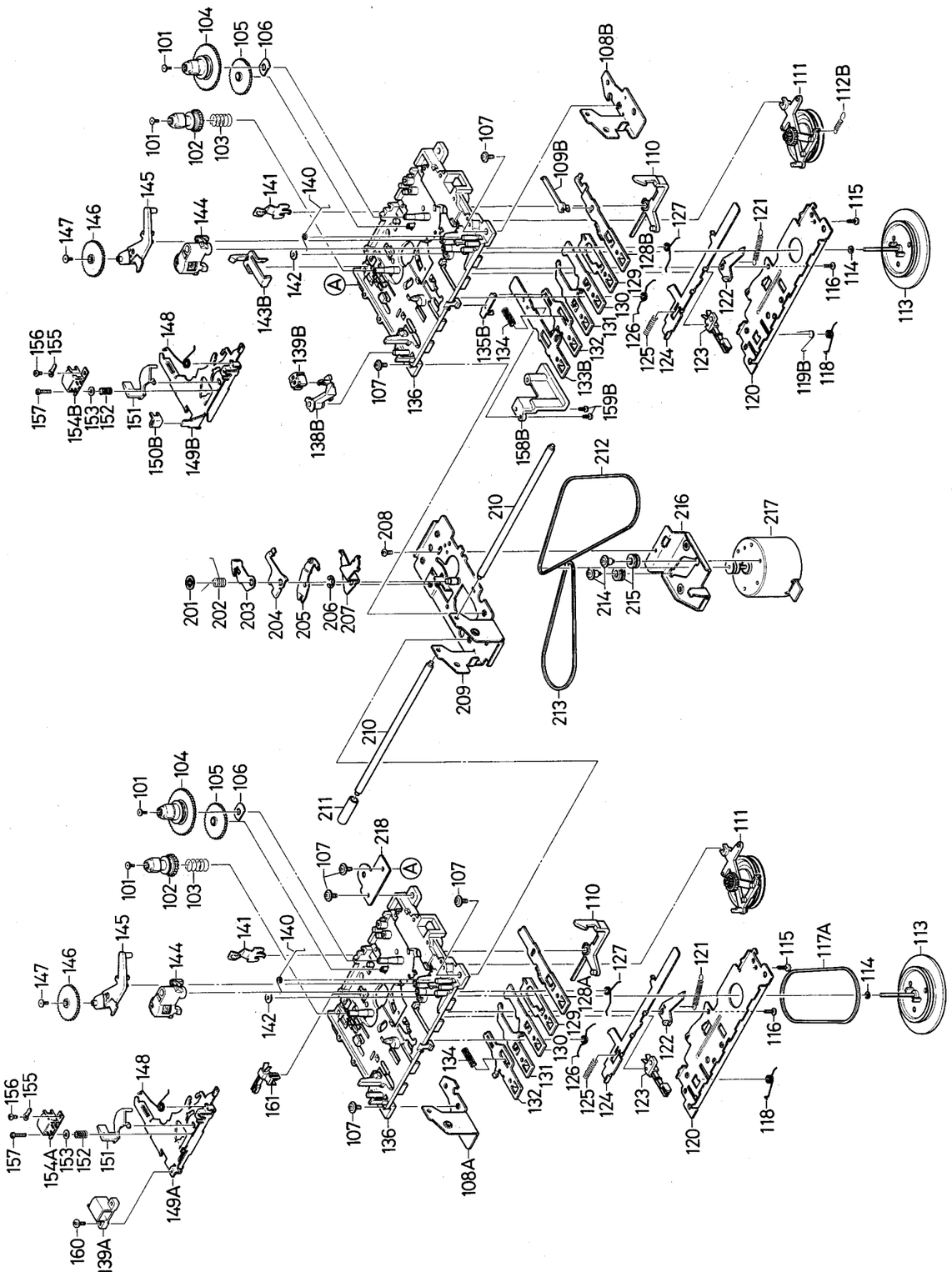
Ref. No.	Part No.	Description
S951	4-238T-37300	SWITCH, AC/DC
S956	⚠ 4-238T-51171	SWITCH, VOLTAGE SELECTOR
D951	⚠ 407 005 1603	DIODE DS135D
D952	⚠ 407 005 1603	DIODE DS135D
D953	⚠ 407 005 1603	DIODE DS135D
D954	⚠ 407 005 1603	DIODE DS135D
C951	403 072 2703	CERAMIC 0.022U Z 50V
C952	403 072 2703	CERAMIC 0.022U Z 50V
C953	403 072 2703	CERAMIC 0.022U Z 50V
C954	403 072 2703	CERAMIC 0.022U Z 50V

MECHANISM (TM-W170TP/LU.SP)

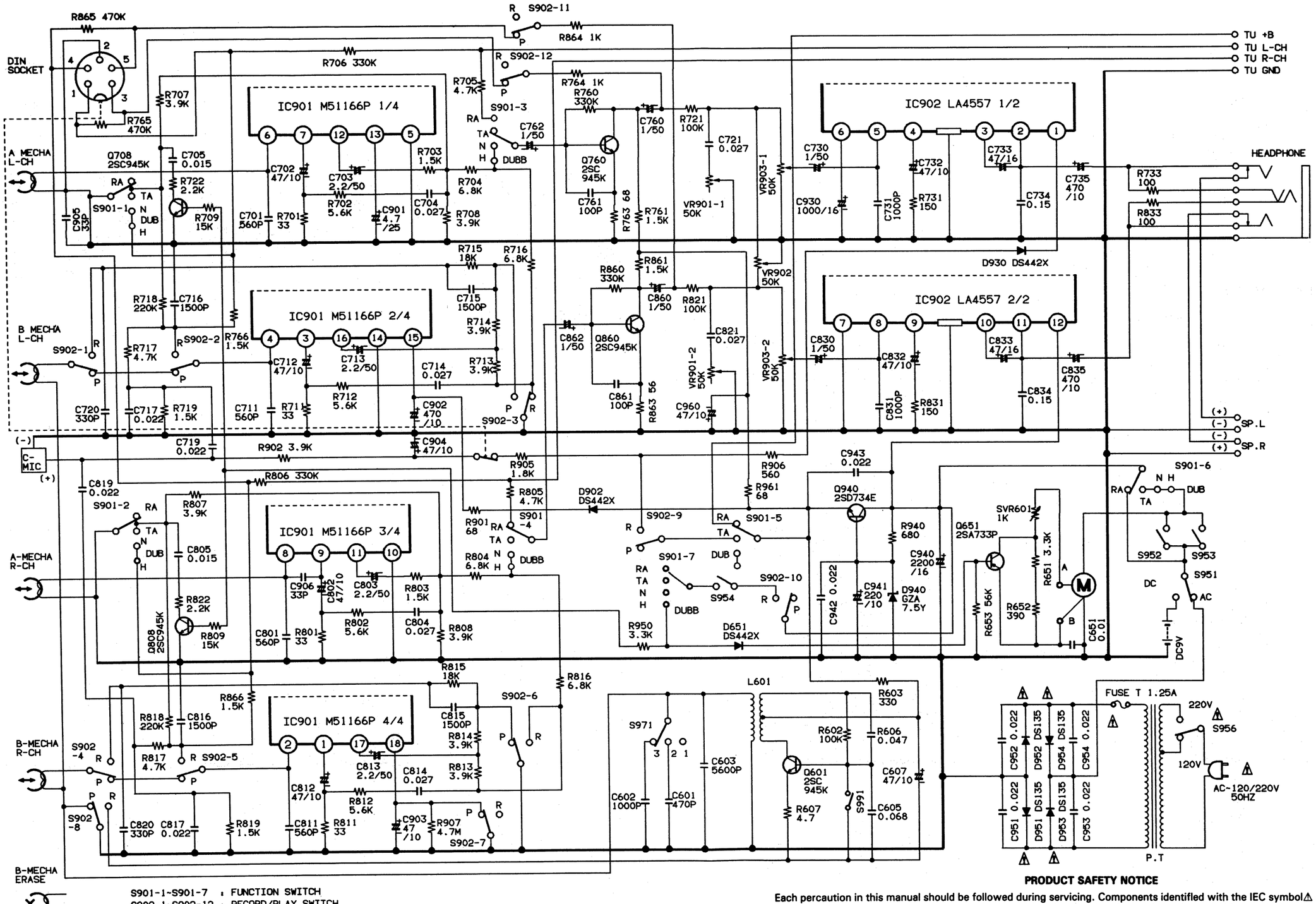
Ref. No.	Part No.	Description
101	412 005 6909	SPECIAL SCREW, REEL MTG.
102	141-2-531T-16500	REEL PLATE, SUPPLY REEL
103	141-2-856T-61200	SPRING COIL, SUPPLY REEL
104	141-0-531T-16600	REEL PLATE ASSY, TAKE-UP REEL
105	141-2-581T-47000	GEAR, F.FWD
106	141-2-853T-98000	SPRING PLATE, TAKE-UP REEL
107	412 020 5901	SPECIAL SCREW, MECHANISM
108A	141-2-290T-31500	BRACKET, BUTTON HOLDER, LEFT
108B	141-2-290T-31400	BRACKET, BUTTON HOLDER, RIGHT
109B	141-2-614T-06600	LEVER LOCK, PAUSE ARM
110	141-2-740T-44400	LEVER, EJECT ARM
111	141-0-740T-44310	LEVER ASSY, POWER ARM
112B	141-2-856T-82500	SPRING COIL
113	141-0-521T-17100	FLYWHEEL ASSY
114	412 012 6909	SPECIAL WASHER, GNW, 2.1X4X0.13MM
115	412 005 6800	SPECIAL SCREW, BLACKET SLIDE MTG.
116	412 006 0500	SPECIAL SCREW, BLACKET SLIDE MTG.
117A	141-2-564T-45500	SQUARE BELT, TAPE "A"
118	141-2-860T-09600	SPRING WIRE
119B	141-2-860T-09700	SPRING WIRE
120	141-2-737T-12300	BRACKET SLIDE
121	141-2-856T-61600	SPRING COIL
122	141-2-740T-44200	LEVER
123	4-248T-17500	SWITCH, MECHANISM POWER
124	141-2-732T-42500	SLIDE, FUNCTION LEVER
125	141-2-856T-61500	SPRING COIL
126	141-2-860T-09500	SPRING WIRE
127	141-2-860T-09400	SPRING WIRE
128A	141-2-732T-54900	SLIDE, PAUSE, TAPE "A"
128B	141-2-732T-41900	SLIDE, PAUSE, TAPE "B"
129	141-2-732T-42000	SLIDE, STOP/EJECT
130	141-2-732T-42101	SLIDE, F.FWD
131	141-2-732T-42201	SLIDE, REW
132	141-2-732T-42300	SLIDE, PLAY
133B	141-2-732T-42400	SLIDE, RECORD
134	141-2-856T-61401	SPRING COIL, PLAY SLIDE
135B	141-2-740T-44100	LEVER, RECORD STOP
136	141-0-311T-53600	CHASSIS ASSY
138B	141-2-740T-43700	LEVER, ERASE HEAD
139A	4-242T-40300	MAGNETIC HEAD, DUMMY
139B	4-242T-39700	MAGNETIC HEAD, ERASE
140	141-2-860T-09300	SPRING WIRE, GROUND

Ref. No.	Part No.	Description
141	141-2-853T-94100	SPRING PLATE, CASSETTE
142	141-2-457T-51600	SPECIAL WASHER, GNW
143B	141-2-740T-43900	LEVER, UNRECORDING SENSOR
144	141-0-545T-11000	LEVER PINCH ROLLER ASSY
145	141-2-740T-43800	LEVER, IDLER ARM
146	141-2-581T-47100	GEAR, IDLER
147	412 005 6305	SPECIAL SCREW, IDLER GEAR MTG.
148	141-2-860T-09200	SPRING WIRE, PINCH ARM
149A	141-2-732T-41801	SLIDE, HEAD
149B	141-2-732T-41800	SLIDE, HEAD
150B	141-2-821T-14300	TAPE GUIDE
151	141-2-740T-44000	LEVER, TAPE SENSOR
152	141-2-856T-61300	SPRING COIL, HEAD AZIMUTH
153	141-2-352T-78300	SPACER, HEAD
154A	4-242T-38571	MAGNETIC HEAD, PLAY
154B	4-242T-29883	MAGNETIC HEAD, RECORD/PLAY
155	141-2-472T-00200	LUG, GROUND, HEAD, TAPE "B"
156	412 005 6503	SPECIAL SCREW, HEAD MTG.
157	412 005 6404	SPECIAL SCREW, HEAD MTG.
158B	141-2-210T-85600	BRACKET, RECORD SLIDE MTG.
159B	411 022 7708	SCR S-TPG PAN 2X5MM
160	412 021 9205	SPECIAL SCREW, DUMMY HEAD MTG.
161	4-248T-41800	SWITCH, PLAY
201	412 020 6205	SPECIAL WASHER
202	141-2-860T-22100	SPRING WIRE, LOCK LEVER
203	141-2-740T-64100	LEVER, LOCK
204	141-2-740T-64200	LEVER ASSY, UNLOCK PLATE
205	141-0-740T-64000	LEVER ASSY, COUPLING
206	412 020 6106	SPECIAL WASHER, "E" RING
207	141-2-740T-64300	LEVER, COUPLING
208	412 020 6007	SPCIAL SCREW, BRACKET MOTOR
209	141-0-290T-31300	BRACKET ASSY, MECHANISM COUPLING
210	141-2-755T-07400	SHAFT, BUTTON
211	141-2-461T-53900	PIPE, SPACER
212	141-2-564T-45300	SQUARE BELT, TAPE "B"
213	141-2-564T-45400	SQUARE BELT, TAPE "B"
214	412 005 6701	SPECIAL SCREW, MOTOR MTG.
215	141-2-445T-36400	RUBBER CUSHION, MOTOR MTG.
216	141-2-378T-20400	BRACKET MOTOR
217	4-527T-33912	COMMUTATE MOTOR
218	141-2-290T-29600	BRACKET, MECHANISM COUPLING
	141-2-247T-86100	SHEET, FELT, BLACKET

EXPLODED VIEW (MECHANISM)



SCHEMATIC DIAGRAM (AMP)



S901-1~S901-7 : FUNCTION SWITCH
S902-1~S902-12 : RECORD/PLAY SWITCH
S951 : AC/DC SWITCH
S952 : MECHANISM POWER SWITCH TAPE"A"
S953 : MECHANISM POWER SWITCH TAPE"B"
S954 : MECHANISM PLAY SWITCH TAPE"A"
S956 : VOLTAGE SELECT SWITCH
S971 : BEAT CANCELL SWITCH
S991 : STOP SWITCH

PRODUCT SAFETY NOTICE

Each percaution in this manual should be followed during servicing. Components identifled with the IEC symbol⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before erturning the product to the customer.

POWER SUPPLY P.C.B

SWITCHES
- S1.....BAND SELECT SWITCH (FM / SW / MW / LW)
- S501.....FM MODE SWITCH (STEREO / MONO)
- S901.....FUNCTION SWITCH (RADIO / TAPE / DUBBING(NORMAL) / DUBBING(HIGH))
- S902.....RECORD / PLAY SWITCH
- S951..... AC / DC SWITCH
- S952.....MECHANISM POWER SWITCH, TAPE "A"
- S953.....MECHANISM POWER SWITCH, TAPE "B"
- S954.....MECHANISM PLAY SWITCH, TAPE "A"
- S956..... VOLTAGE SELECT SWITCH (120 / 220V)
- S971..... BEAT CANCEL SWITCH (1 / 2 / 3)
- S991.....STOP SWITCH

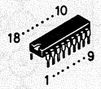
CONTROLS
- VR101....FINE TUNE
- VR901....TONE CONTROL
- VR902....BALANCE CONTROL
- VR903....VOLUME CONTROL

IC101....LA1186N

IC301....LA1260S

IC501....LA3365

IC901....M51166P



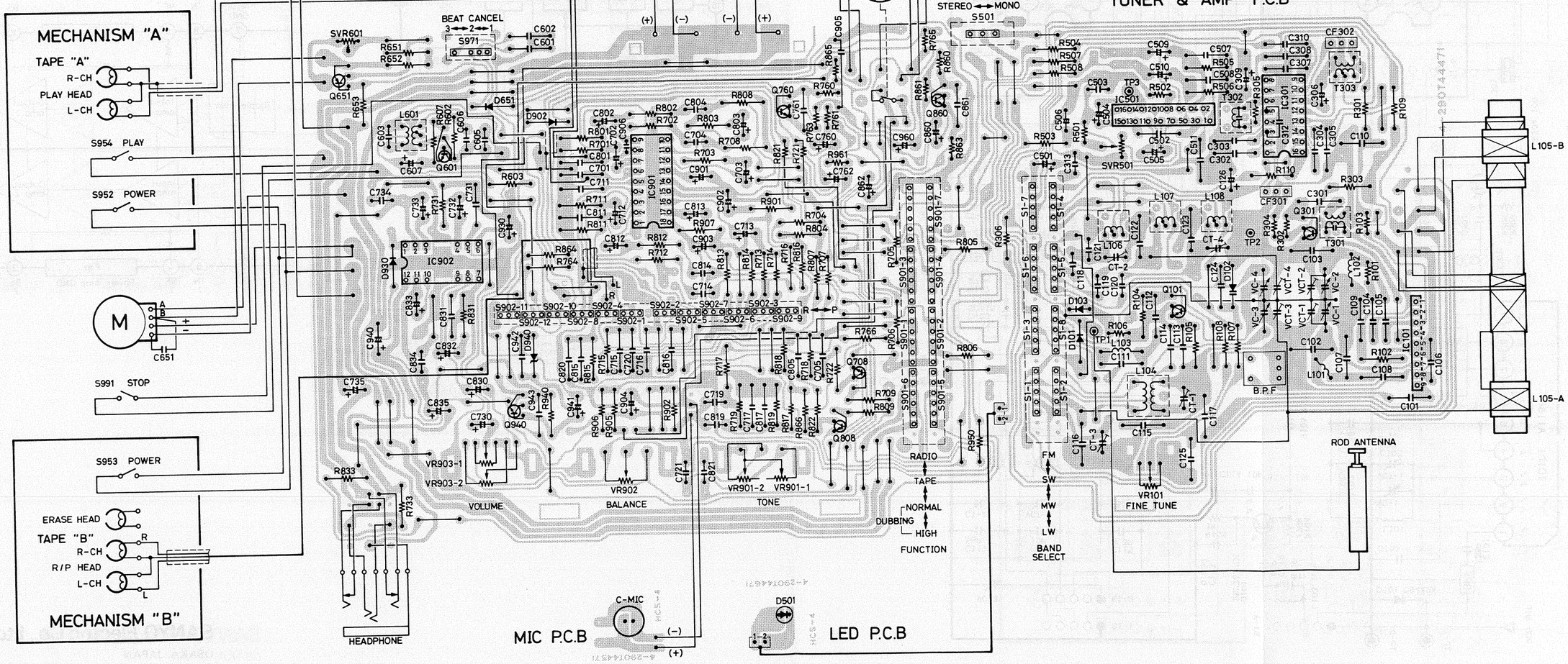
IC902....LA4557

Q101.301.....2SC380
Q601.708.760 Q808.860 ...2SC945
Q651.....2SA733
Q940.....2SD734

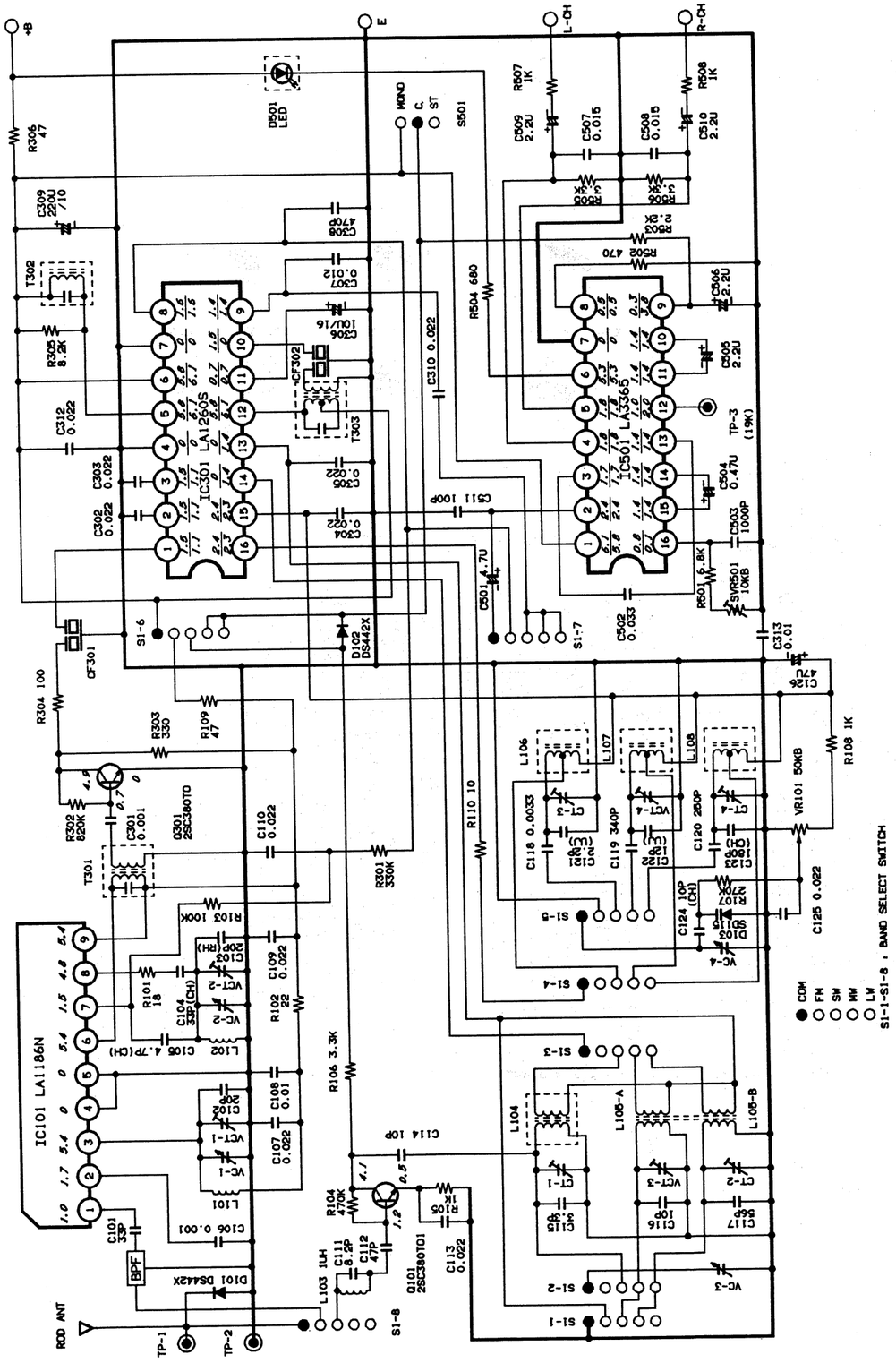
MECHANISM "A"

MECHANISM "B"

TUNER & AMP P.C.B

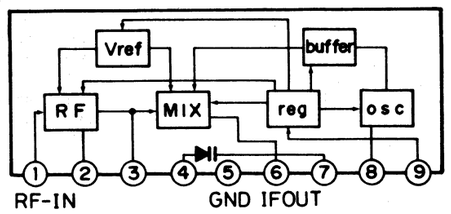


SCHEMATIC DIAGRAM (TUNER)

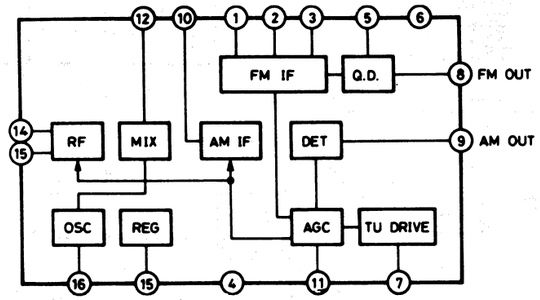


IC BLOCK DIAGRAM

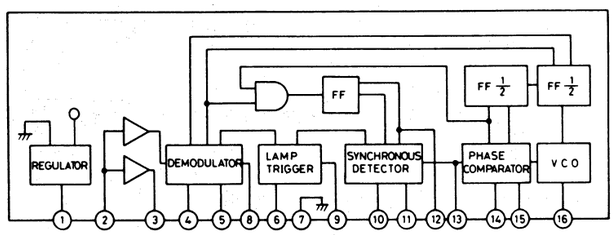
IC101 LA1186N FM FRONT END



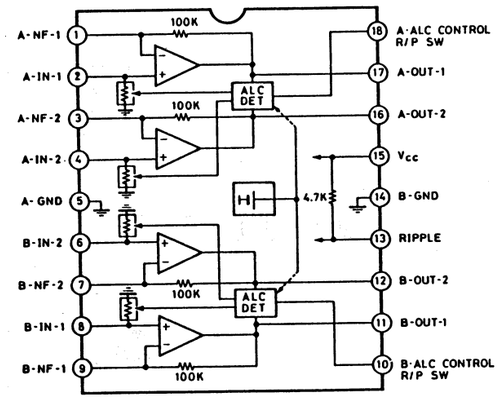
IC301 LA1260S FM/AM IF & DETECTOR



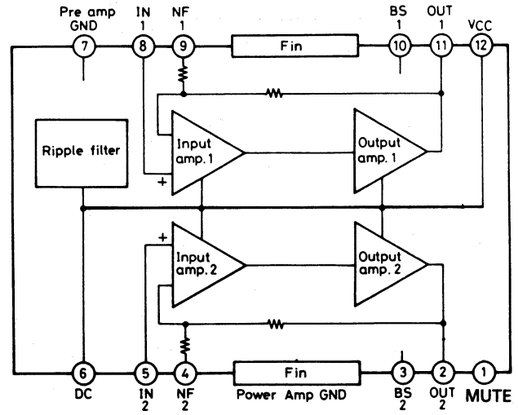
IC501 LA3365 FM MPX



IC901 M51166P PRE-AMP



IC902 LA4557 POWER AMP.



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